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I, JANENE PEISKER, TEAM LEADER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. 2004901396 for a patent by FRANK DANIEL LOTRIONTE as filed on 18 March 2004.



WITNESS my hand this  
Fourteenth day of April 2005

A handwritten signature in black ink, appearing to read 'J. Peisker'.

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AUSTRALIA  
Patents act 1990

**COMPLETE SPECIFICATION  
PROVISIONAL PATENT**

**WIND MILL IMPELLOR**

Technical Category :        Mechanical,    Electrical and electronics.

**THE INVENTION IS DESCRIBED IN THE FOLLOWING STATEMENT :**

## IMPROVED WINDMILL IMPELLOR

Technical Category : Mechanical.

This invention aims at supplying the drive torque necessary for various applications including water pumping , ventilation , etc. from a reduced product size and / or available wind speed with a specially designed impellor that maximisers the conversion of airflow around and though it to available torque, by means of concentrating most of the work done ( where it is of maximum efficiency ) at its circumference , as well as using the surrounding air flow to create a reduced pressure inside , which effectively increases the airspeed of wind travelling directly through the remainder of the impellor blades.

### DESCRIPTION

A number of curved section , longitudinally orientated " vanes" # 1 with a slight longitudinal twist or helix increasing toward the rotation direction # 2 ,all rotatably aligned parallel to the inward wind direction fixed to the outer " windward " ends of an equal number of outwardly projecting blades containing a slight increasing surface curvature in both their outer horizontal and vertical planes # 3 thus permitting full co - joining at their respective junctions, see Figure 1 , are centrally connected and radially displaced around a central hub or shaft. # 4  
An annular " rim" # 5 being of slight thickness , with a curved forward outer edge is attached to the forwardmost outer edge of the " vanes" described in Figure 1. and provides additional rigidity to as well as deflecting surrounding air flow away and around , the vanes #1 , and along with the inclusion of a connection to a drive shaft or generator , completes the impellor.

The impellor is constucted in such a way to allow cavity mouldability in rigid plastics , forming in sheetmetal or aluminium, either as one complete unit or to be assembled in sections by bolting, rivets, welding , encased moulding or similar.

## IMPROVED WINDMILL IMPELLOR

Technical Category : Mechanical, Electrical and electronics.

This invention aims at supplying the drive torque necessary for various applications including water bore pumping, power generation etc. from a reduced product size and / or available wind speed with a specially designed impellor that maximizers the conversion of airflow around and though it to available torque, by means of concentrating most of the work done ( where it is of maximum efficiency ) at its circumference, as well as using the surrounding air flow to create a reduced pressure inside, which effectively icreases the airspped of wind travelling directly through the remainder of the impellor blades.

### DESCRIPTION

A number of curved section, longitudally orientated " vanes" # 1 with a slight longitudinal twist or helix increasing toward the rotation direction # 2, all rotatably aligned parallel to the inward wind direction fixed to the outer " windward " ends of an equal number of outwardly projecting blades containing a slight increasing surface curvature in both their outer horizontal and vertical planes # 3 thus permitting full co - joining at their respective junctions, see Figure 1, are centrally connected and radially displaced around a central hub or shaft. # 4

A short annular " rim" # 5 being of slight thickness, with a curved forward outer edge is attached to the forwardmost outer edge of the " vanes" described in Figure 1. and provides additional rigidity to as well as deflecting surrounding air flow away and around, the vanes #1, and along with the inclusion of a connection to a drive shaft or generator, completes the impellor.

The impellor is constucted in such a way to allow cavity mouldablity or forming in sheetmetal or aluminium, either as one complete unit or to be assembled in sections by bolting, rivets, welding encased moulding or similar.

**ABSTRACT :**

This invention essentially comprises of an impellor that is a conjunction / co-operation of 2 differing types of air flow devices ( fans ) and consists of a number of individual outwardly projecting thin , slightly curved surfaces ( blades ) inclined to act in reaction to the air flow ,that have at their respective outer, most frontward , ( windward ) edges , a typically curved section substancially forward projecting extension of substancial length twisted or slanted in a slight helix angle similar but slightly less than the inclination angle of the blades they are joined to , all being radially displaced and attached to a central hub rotating perpendicular to the windward direction.

The complete unit can be mounted on a mast , enclosure or structure with self -orienting ability to windward and may contain a method of limiting airflow if an unusually fast wind speed occurs during a gale etc. or when maximum power output occurs.

WINDMILL IMPELLOR  
 Frank D Lotrionte  
 14-3 2004

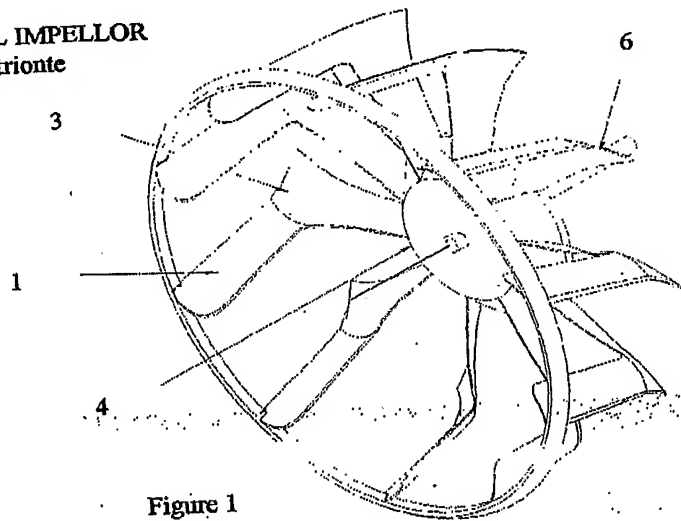


Figure 1

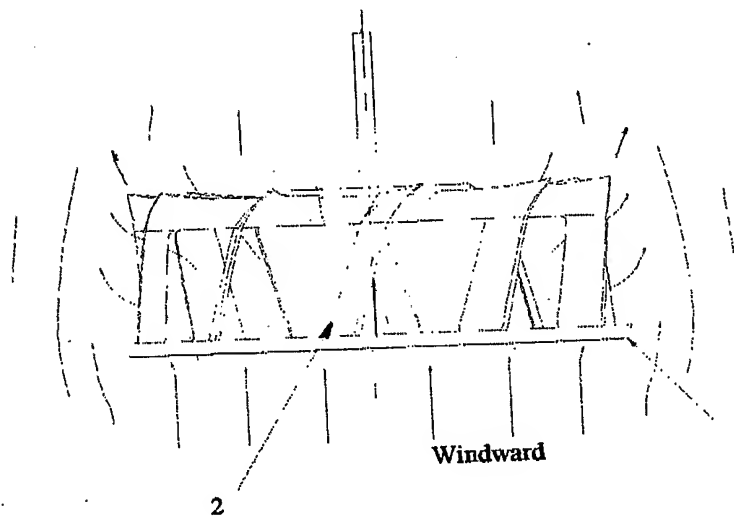


Figure 2 -Top view

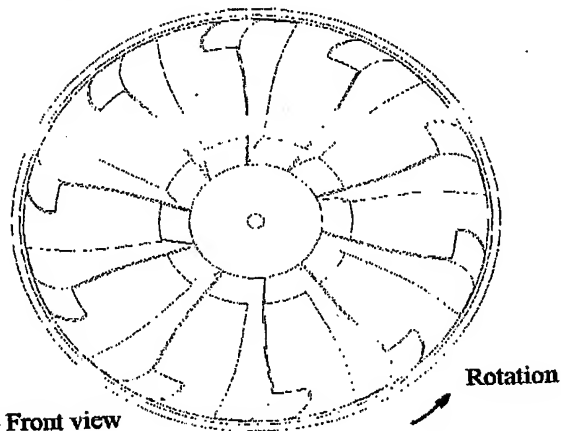


Figure 3 - Front view